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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PATRICK N. MATTHEWS, SIVAKUMAR SUBRAMANIAN,  
and JEFFERSON L. CREEK

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Appeal 2009-005142  
Application 10/740,265  
Technology Center 1700

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Before BRADLEY R. GARRIS, ADRIENE LEPIANE HANLON, and  
CHARLES F. WARREN, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL<sup>1</sup>

Appellants appeal under 35 U.S.C. § 134 from the Examiner's  
decision rejecting claims 1-26. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

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<sup>1</sup> The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Appellants claim a method for inhibiting hydrate formation blockage in a flow line transporting a hydrocarbon containing fluid which comprises adding water to a hydrocarbon containing fluid to produce a water cut enhanced hydrocarbon containing fluid consisting essentially of hydrocarbon containing fluid, water, and optionally salt or brine, whereby hydrate formation blockage is inhibited (claim 1). In a particular embodiment, the water cut of the water cut enhanced hydrocarbon containing fluid is at least 50% (claim 2). Appellants also claim a system for preventing the formation of hydrate blockage in a flow line which comprises a flow line, a water injection conduit, and a hydrocarbon source (claim 14).

Representative claims 1, 2, and 14 read as follows:

1. A method for inhibiting hydrate formation blockage in a flow line transporting a hydrocarbon containing fluid, the method comprising:

adding water to a hydrocarbon containing fluid to produce a water cut enhanced hydrocarbon containing fluid, whereby the water cut enhanced hydrocarbon containing fluid consists essentially of hydrocarbon containing fluid, water, and optionally salt or brine; and

transporting the water cut enhanced hydrocarbon containing fluid through a flow line under conditions that would be conducive for the formation of hydrates in the original hydrocarbon containing fluid;

whereby hydrate formation blockage is inhibited from forming within the flow line by the addition of the water.

2. The method of claim 1 wherein:

sufficient water is added such that the water cut of the water cut enhanced hydrocarbon containing fluid is at least 50%.

14. A system for preventing the formation of hydrate blockage in a flow line, the system comprising:

a flow line for transporting a hydrocarbon containing fluid;

a water injection conduit fluidly connected to the flow line to add water to the flow line, the water injection conduit being in fluid communication with one of a source of sea water, a source of fresh water, a subsea well or water produced from fluids from a hydrocarbon producing well bore; and

a hydrocarbon source which is in fluid communication with the flow line to provide a hydrocarbon containing fluid to the flow line;

wherein water may be added to the flow line from the water injection conduit to [sic] to produce a water cut enhanced hydrocarbon containing fluid, whereby the water cut enhanced hydrocarbon containing fluid consists essentially of hydrocarbon containing fluid, water, and optionally salt or brine.

The Examiner rejects all appealed claims under 35 U. S. C. § 103(a) as being unpatentable over any one of Colle '269 (US Patent 5,491,269, issued February 13, 1996), Colle '083 (US Patent 6,222,083 B1, issued April 24, 2001), or Peiffer (US Patent 6,194,622 B1, issued February 27, 2001) (Ans. 3-6).

We will sustain these rejections for the reasons expressed in the Answer and below.

The Examiner finds that each of the applied references teaches a method for inhibiting hydrate formation blockage in a flow line by adding to a hydrocarbon containing fluid water which contains about 0.01% by weight of hydrate inhibitor (*id.*). The Examiner also finds that each of these references teaches or would have suggested a system for preventing the

formation of hydrate blockage in a flow line (*id.*). These findings have not been disputed by Appellants.

Appellants argue claims 1 and 5-26 as a group and claims 2-4 as a group (Br. 7, 10). Accordingly, we select independent claim 1 and dependent claim 2 to represent these respectively argued claim groups. Independent system claim 14 and the claims which depend therefrom are deserving of separate attention for the reasons discussed below.

The issue presented by the rejections of representative claim 1 is whether the claim phrase "consists essentially of" excludes the about 0.01% by weight of hydrate inhibitor taught by the applied references.

It is a well established principle of law that the phrase "consists essentially of" includes the listed ingredients of the claim and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention. *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351, 1354 (Fed. Cir. 1998). Appellants have the burden of showing that unlisted ingredients would materially affect the basic and novel properties or characteristics of the claimed invention. *In re De Lajarte*, 337 F.2d 870, 873-74 (CCPA 1964).

Appellants argue that the inclusion of hydrate inhibitors (e.g., at low concentrations of about 0.01%) would materially affect the basic and novel characteristics of their claimed invention (Br. 7-10). As support for this argument, Appellants cite to disclosures at page 8, lines 15-28, and at page 2, lines 8-22, of their Specification (*id.*). Appellants' argument is unpersuasive.

The Specification disclosures cited by Appellants do not support the proposition that low concentrations (e.g., 0.01% by weight) of hydrate

inhibitors would materially affect the basic and novel characteristics of the claim 1 Invention. To the contrary, the Specification disclosure on page 8 expressly teaches that "[s]witching to water or high salinity brine injection as the hydrate inhibition strategy is also expected to reduce chemical inhibitor presence in water and the oil phase" (Spec. 8: 18-20; emphasis added). This teaching evinces that the method defined by claim 1 encompasses the presence of reduced amounts of hydrate inhibitor.

For this reason, Appellants have failed to carry their burden of showing that the about 0.01% by weight of hydrate inhibitor taught by the references would materially affect the basic and novel characteristics of the claim 1 invention.

In addition to the deficiencies discussed above, Appellants' argument has no apparent relevance to the system defined by independent claim 14 and dependent claims 15-23. That is, Appellants have not explained how their claimed system would be modified by the fluids flowing therethrough regardless of whether these fluids contained hydrate inhibitors. This apparent lack of relevance is highlighted by the fact, indicated previously, that Appellants have not disputed the Examiner's finding that each of the applied references teaches or would have suggested a system for preventing the formation of hydrate blockage in a flow line (Ans. 3-6).

Finally, Appellants argue that the Examiner has not explained in what way any of the applied references discloses or suggests the water cut percentages required by claims 2-4 such as the "at least 50%" water cut requirement of claim 2 (Br. 10).

However, the Examiner finds that in each of the references, "[w]hen the water is initially added to the hydrocarbon fluid, the water cut is

essentially 100% before it mixes with the hydrocarbon fluid and the water cut % decreases as the water mixes in with the hydrocarbon fluid" (Ans. 7). Appellants have not contested this finding with any reasonable specificity in the record of this appeal. Furthermore, the Examiner's finding is supported by the established proposition that a composition contains the specified ingredients at any time from the moment at which the ingredients are mixed together. *See Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1558 (Fed. Cir 1995) (claims are to a composition that contains the specified ingredients at any time from the moment at which the ingredients are mixed together).<sup>2</sup>

For the reasons set forth above and in the Answer, we sustain the Examiner's § 103 rejections of all appealed claims.

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a) (2008).

AFFIRMED

Ssl

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<sup>2</sup> The Examiner's unpatentability determination for claims 2-4 is reinforced by Appellants' admission that prior art hydrate inhibitors "are usually recommended for application for water cuts of less than 50%" (Spec. 2:6; emphasis added). This is because Appellants' admission implies that prior art hydrate inhibitors are sometimes recommended for water cuts of 50% or more.